

KVASH/NINA Ye. I.

Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies E-5

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 6655

Author : Prosvirin, V.I., Kvashinina, Ye.I.

Title : Effect of Alloying Elements on the Temper Brittleness of Structural Steels;

Orig Pub : Term. obrabotka i svoystva litoy stali. M., Mashgiz, 1955,  
69-87

Abstract : It was established that addition of molybdenum up to 0.5% prevents the development of processes that cause the temper brittleness of structural chrome-nickel-molybdenum and chrome-manganese-molybdenum steels. Greater additions of molybdenum (1% and above) do not effect the temper brittleness. Addition of tungsten up to a definite limit (up to 1.6% for the 35 KhGV steel) retard strongly the development of the temper brittleness of structural steels. X-ray diffraction, carbide, and metallographic investigation methods, as well as measurements of the internal friction and other properties have shown that molybdenum and tungsten, which enter into

Card : 1/2

KVASHINA, Ye. I.

USSR/Solid State Physics - Phase Transformations in Solids, E-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34678

Author: Kvashina, Ye. I., Bondarenko, Ya. A.

Institution: None

Title: Experience in Electron-Microscopic Investigation of Austenitic Steel EI 257

Original Periodical: Metallovedeniye i obrabotka metallov, 1955, No 1, 34-36

Abstract: None

Cent. Inv Res Inst. Heavy Machine Building

1 OF 1

- 1 -

14146 Internal Friction of Steel and Temper Brinleness.  
E. I. Kvashnina and V. I. Prosvirin. Henry Bratcher Transla-  
tion No. 3330, 6 p. (From Izvestiya Akademii Nauk SSSR, 62  
1955, no. 1, Jan., p. 157-159.) Henry Bratcher, Altadena, Calif. MG  
Previously abstracted from original. See item 10605, v. 4, 13

10/80

KVASHNINA, E.I.

USSR/ Engineering - Structural tests

Card 1/1 Pub. 128 - 14/23

Authors : Prosvirin, V. I., and Kvashnina, E. I.

Title : The effect of carbide forming elements on the brittleness of tempered steel.

Periodical : Vest. mash. 2, 58 - 67, Feb 1955

Abstract : The influence of manganese, molybdenum, tungsten and titanium admixtures on the brittleness of tempered steels at various temperatures, was investigated. Technical data are presented on testing temperatures, types of steel and admixtures used, and the chemical composition of various grade steels. Ten references: 2 German (1933 and 1942); 1 French (1946); 2 USA (1920 and 1950). Tables; graphs; illustrations.

Institution: .....

Submitted: .....

KVASHNINA, YE.I.

Category : USSR/Solid State Physics - Mechanical properties of crystals and poly-crystalline compounds E-9

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 1368

Author : Prosvirin, V.I., Kvashnina, Ye.I.

Title : Position of the Cold-Shortness Threshold in the Tempering Brittleness

Orig Pub : Metallovedeniye i obrabotka metallov, 1955, No 3, 17-20

Abstract : When tempering brittleness is produced in steel, one observes a shift in the threshold of the cold-shortness towards high temperatures. Prolonging the heating time in high-temperature tempering shifts the cold-shortness threshold towards the lower temperatures, and increasing the grain dimension shifts it towards higher temperatures. No shift in the cold-shortness threshold is observed in stages that are not prone to tempering brittleness.

*Cent. Sci. Res. Inst. Metallurgy and Machine Building*

Card : 1/1

*KVASHNINA, YE. I.*

Category : USSR/Solid State Physics - Phase transformation of solid bodies

E-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1183

Author : Kvashnina, Ye.I.

Inst : TsNIITMASH, (Centr. Sci. Res. Inst. for Tech. Machinery), USSR

Title : Study of Intragranular Mosaic Structure of Austenite with the Aid of the Electron Microscope

Orig Pub : Metallovedeniye i obrabotka metallov, 1955, No 5, 15-17

Abstract : Report on the results of electron-microscopical investigations of the grain structure of the austenite of three brands of steel: 1KhN9T, EI402, EI448. The specimens were hardened from 1150°. Each grain of austenite has its own orientation of blocks, the size of which differs in the different grains. Sections with a different block orientation are encountered inside the individual grains of austenite. Located around the grain boundaries is a small zone with a distinct distribution of blocks compared with the more remote zones of the grains.

Card : 1/1

AVASH NINA /E.I.

*g.v.*  
*copied*  
Study of the intergranular mosaic structure of austenitic  
steels by use of the electron microscope. R. I. Krishnamoorthy  
Metallurgy & Obshchaya Metallofizika 1955, No. 5, 15-17.—The  
compos. of the 3 steels studied were: 1Kh18N9T, 0.11% C,  
1.20 Mn, 0.38 Si, 10.62 Ni, 17.91 Cr, 0.5 Ti; E14O2, 0.08 C,  
1.0 Mn, 0.8 Si, 11.3 Ni, 18.8 Cr, 1.2 Nb; E1448, 0.08 C, 1.1  
Mn, 0.6 Si, 11.2 Ni, 17.7 Cr, 2.45 Mo, 0.48 Ti. The steels  
were quenched from 1150°, polished, and repeatedly elec-  
trolytically etched with 10% ammonium persulfate at 0.2  
amp./sq. cm. with intermediate polishing. The Ti replicas  
were removed by electrolytic etching in a 10% soln. of  
aqueous  $\text{FeCl}_3$  at 0.5 amp./sq. cm. Electron micrographs at  
7500X showed a fine internal structure within the austenite  
grains. The orientation and size of this block structure  
varied from one grain to another. Also, at grain boundaries  
there were regions of various widths with block structures  
different from that of the grain proper. Occasional grains  
contained regions in which the block structure was of dif-  
ferent orientation. At the boundary of a carbide particle  
the block structure was also different. A. G. Guy

KVASHNINA, Ye.I.

USSR

Influence of carbide-forming elements on temper brittleness of steels. V. I. Prosvirin and E. I. Kvashnina. Vestnik Mashinostroyeniya 35, No. 2, 1957 (1957). In order to find the mechanism through which Mo and W lower temper brittleness of steels, a series of steels were similarly heat-treated, tested for impact strength at +20 to -100°, and the sspd. carbides analyzed chemically and by x-rays. The Cr-Mo steels contg. C 0.35, Mn 1, and Cr 1.3% quenched from 800° in oil have 90% of their Mo in solid soln. When they are tempered at 650° and heated 100 hrs. at 500°, up to 0.44% Mo reduces brittleness; above 0.44% increases it. On reaching 1% Mo, the Mo<sub>2</sub>C appears while the solv. of Mo in ferrite decreases. Different effects of Mo content are assoed. with the difference in its distribution between carbides and solid soln., the concn. in the latter being the real cause. In a steel with 0.44% Mo, a redistribution of alloying elements in carbides takes place at 500°, but the total vol. of carbides remains const., while in the same steel, but in the absence of Mo, addnl. carbides ppt. without any changes in compn. Atoms of Mo in solid soln. and having a strong affinity for C interfere with free diffusion of the latter and formation of stable compds. with Fe, Mn, etc., which interferes with the development of cementite crystals. When there is less Mo than required for combining with C, cementite ppts.; when more, Mo<sub>2</sub>C leaves solid soln. in both cases causing brittleness. In Cr-Mn steels, contg. C 0.32-0.38, Mn 1, Si 0.3, Cr 1.01-1.80, and W 0.6-2.4%, quenched from 800° in oil and tempered for 2

link, at 650°, the impact strength decreased with the time of cooling after tempering, W reducing this effect; 1.5% W makes it independent of cooling rate when tested at 20°, greater and smaller concns. both influencing it. Abs. impact figures were highest under any conditions for 0.8-0.8% W steels. After heating tempered and water-cooled samples at 500° for 10-500 hrs. and testing at 20°, all alloys, with the exception of the one contg. 1.55% W, showed a decrease to a min. and then an increase with a longer heating time. The impact strength of the 1.5% W steel remained const. Impact testing at +20 to -100° demonstrated a shifting of the transition point upwards with a longer heating time, but W up to 1.5% retarded it and then speeded the shifting. About 90% W in samples tempered at 650° is in solid soln. when the element is under 1.85%, but with a greater concn. of W its percentage in carbides increases, but no changes in the structure of the carbide phase occurs on passing from the ductile to the brittle state. In Cr-Ni steels with C 0.3, Si 0.3, Mn 0.6, Cr 0.89-1.40, Ni 1.08-3.20%, addition of 0.8-1.55% W increases toughness of thermally embrittled steel in the +20 to -80° range proportionally to its content. Replacing Mo with W in Cr-Ni-Mo steel and aging showed at -60° a drop in impact strength directly proportional to W content. Neither Ti, V, nor Nb have any effect on embrittlement.

J. D. Gat

M. R. H.

Kvashnina, Ye. I.

USSR / Phase Conversions in Solids.

E-5

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9307

Author : Prosvirin, V.I., Kvashnina, Ye. I.  
Title : Concerning the Nature of the Temper Brittleness of Pearlite Steels.

Orig Pub : Metallovedeniye i obrabotka metallov, 1956, No 2, 24-49

Abstract : It is shown for structural steels that the kinetics of the development of brittleness is in principle the same for all brands of steel. Using the methods of carbide and X-ray structural analysis it is established that the secondary phase in the viscous and brittle states is the carbide of the cementite type with dissolved carbide-forming elements. The crystallographic structure of the secondary phase does not change when the steel changes from the viscous state to brittle, but the amount of this phase increases. An increase the amount of carbide phase as the result of heat-

Card : 1/2

USSR / Phase Conversions in Solids.

E-5

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9307

**Abstract** : tинг is observed in the zone of the development of the brittleness also after a prolonged high-temperature tempering; this is not observed when the steel is alloyed with 0.5% Mo. This action of Mo is observed when the contents of the latter is optimum for each brand of steel. It is established that in the case of optimum content, all the molybdehum is in solution and retards strongly the carbide formation. It is proposed that this also prevents the development of brittleness. The mechanism of the development of brittleness is connected with the fact that as the limit of solubility of carbon in  $\alpha$ -iron is approached in tempering, the separation of the last portions of carbon is strongly retarded. Under these conditions new portions of carbide are formed in the boundary zones of the crystals in plate-like forms, which causes a reduction in the impact viscosity.

Card : 2/2

PROSVIRIN, V.I., dokter tekhnicheskikh nauk, professor; KVASHNIKA, Ye.I.,  
kandidat tekhnicheskikh nauk.

The nature of temper brittleness in perlite steel. Metalloved. i  
ebr. met. no.2:34-49 P '56.  
(MIRA 9:7)

1.Tsentral'nyy nauchno-issledovatel'skiy institut tyazhelege  
mashinostroyeniya.  
(Perlite) (Steel--Brittleness)

AUTHOR: Kvashnina, Ye. I., Candidate of Technical Sciences. 616  
(TsNIITMASH).

TITLE: Electron-microscopic investigation of the structure of the steel 1X18H9T after various conditions of heat treatment. (Elektronno-mikroskopicheskoye issledovaniye struktury stali 1X18H9T Posle razlichnykh rezhimov termicheskoy obrabotki).

PERIODICAL: "Metallovedenie i Obrabotka Metalloy" (Metallurgy and Metal Treatment), 1957, No.5, pp.35-38 (U.S.S.R.)

ABSTRACT: Comparison of the measured values of the impact strength and of the micro-structure in the case of differing hardening temperatures does not provide an explanation of the sharp increase of the impact strength as a result of an increase in the hardening temperature above 1050°C. For clarifying the structural changes taking place in a steel containing 0.11% C; 1.20% Mn; 0.42% Si; 17.9% Cr; 10.06% Ni; 0.50% Ti; 0.021% S; 0.02% P, investigations were carried out by means of an electron-microscope. After etching the polished specimens a titanium film was deposited by evaporation in vacuum and this film was removed by electrolytic etching in a 10% alcoholic solution of aqua regia. Fig.1 shows two photos of the micro-structure (magnification 7500 times) obtained for heating temperatures of 1150 and 1050°C respectively; Fig.3

Contd 1/2

616  
Electron-microscopic investigation of the structure of the steel 1X18H9T after various conditions of heat treatment. (Cont.)

shows three photos of the micro-structure for the steel after hardening at 1200°C and ageing for 1000 hours at 575°C, for ten hours at 800°C and for 500 hours at 800°C respectively. The investigations enabled to detect new features in the structure of the studied steel and to indicate the structural changes which produce a change in the mechanical properties resulting from the heat treatment. 1 Table, 2 Figures (photographs).

Card 2/2

KVASHNINA, Ye.I., kandidat tekhnicheskikh nauk.

"Microscopic investigation of metals" by E.E. Levin. Reviewed by  
E.I. Kvashnina. Metalloved.i obr.met. no.7:60-71 Jl '57.

(Metallography) (Levin, E.E.)

(MLRA 10:8)

## PHASE I BOOK EXPLOITATION

SOV/5511

Kauchino-tehnicheskoye obshchestvo nauchno-tekhnicheskoy pravleniya.  
Kiyevskoye oblastnoye pravleniye.

Metallovedeniye i termicheskaya obrabotka (Physical Metallurgy and Heat Treatment of Metals) Moscow, Naukiz, 1961. 350 p. Errata slip. Issued. 5,000 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskyy komitet masinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye pravleniye.

Editorial Board: M. P. Braun, Doctor of Technical Sciences, I. Ya. Dzhigay, Doctor of Technical Sciences, D. A. Dryafor, Doctor of Technical Sciences, I. S. Kaminskaya, Engineer, Ye. A. Markovskiy, Candidate of Technical Sciences, V. O. Pernyakov, Doctor of Technical Sciences, and A. V. Chernovol, Candidate of Technical Sciences; Ed.: M. S. Soroka; Tech. Ed.: H. S. Gornostaypol' Skrypa; Chief Ed., Naukiz (Southern Dept.): V. K. Serdyuk, Engineer.

Card 1/10

PURPOSE: This collection of articles is intended for scientific workers and technical personnel of research institutes, plants, and schools of higher technical education.

COVERAGE: The collection contains papers presented at a convention held in Kiyov on problems of physical metallurgy and methods of heat treatment of metals applied in the machine industry. Phase transformations in metals and alloys are discussed, and results of investigations conducted to ascertain the effect of heat treatment on the quality of metal are analyzed. The possibility of obtaining metals with given mechanical properties is discussed, as are problems of steel brittleness. The collection includes papers dealing with kinetics of transformation, heat treatment, and properties of cast iron. No personalities are mentioned. Articles are accompanied by references, mostly Soviet.

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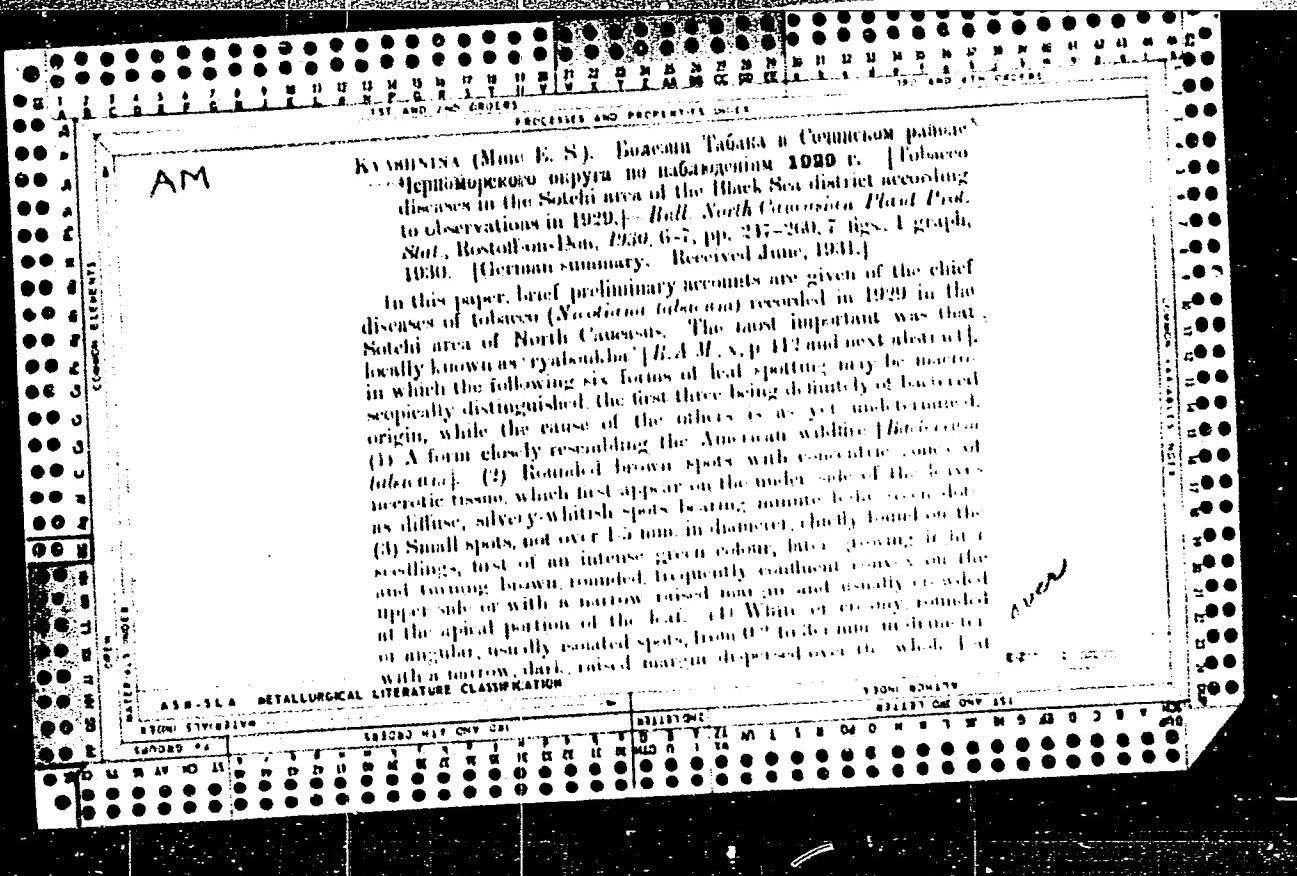
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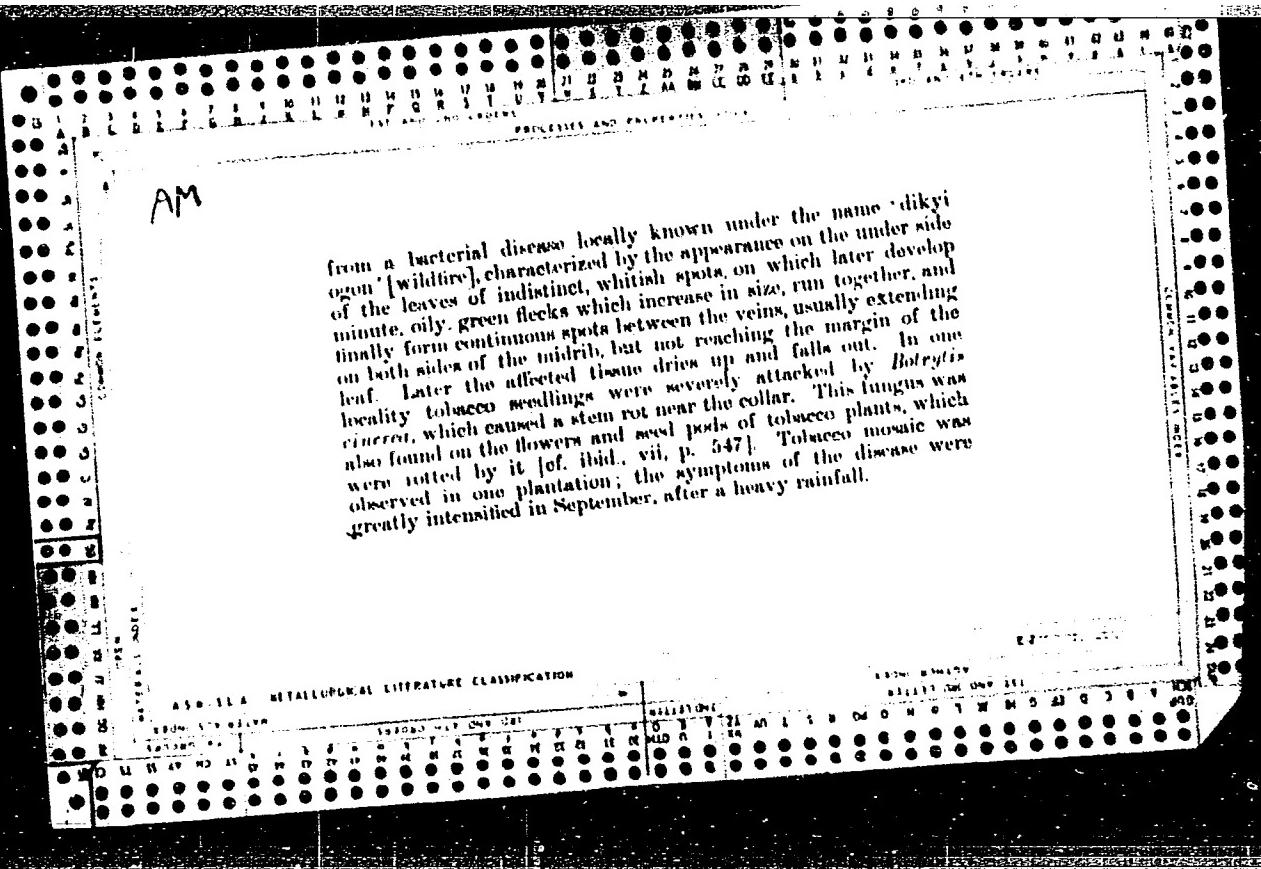
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Card 9/10 317



or occur usually grouped on one longitudinal leaf, and often perforated owing to the breaking away of the affected tissue. This form appeared to be most frequent on plants exposed to direct sunlight. (c) Rounded or irregular, frequently lobate, white to brown spots, about 1.5 to 6 mm. in diameter, with a narrow, distinct, raised margin, rather rare. (d) Irregularly angular, brown usually confluent spots, 0.5 to 6 mm. in diameter, with a raised

white streak and a dark, raised margin; this type was only observed in small quantity on a local variety. Form (e) was occasionally found associated with *Ascochyta nicotianae* [ibid., ix, p. 227], and the spots of forms (5) and (6) frequently bore later in the season pyenidia of an undetermined species of *Phyllosticta*, differing from *P. tabaci* [loc. cit.] in the size of its spores. The relationship of this organism to the disease is being investigated. No great variations were observed in the susceptibility of the tobacco varieties cultivated in the region to 'ryaboukh'; but healthy individual plants were often found growing among heavily infected ones, a fact which would indicate the possibility of developing resistant strains by selection.

Among the other diseases described the following may be mentioned: A severe seedling blight, associated with leaf-spotting, which developed in the seed-beds under glass of an important nursery during a prolonged spell of foggy and drizzling weather; although the cause of this blight was not established, it is believed to have been of bacterial origin. Some varieties suffered heavily



**KWASHNINA (Mina E. S.).** Бактериальный гоммоз Хлопчатника на Тайванском полуострове по данным наблюдений в 1931 г. [Bacterial gummosis of Cotton in the Taiwan peninsula, according to observations in 1931.]—*Bull. N. Caucasian Inst. for Plant Protection Rostov-on-Don*, i. (viii), 2, pp. 52-68, 2 pls., 2 graphs, 1933. [English summary.]

This is a detailed account of a generalized bacteriosis of the cotton plant which was very prevalent in 1931 in the newly established cotton fields in the Taman peninsula [Black Sea littoral of Northern Caucasus]. The disease [which has been attributed to *Bacterium malvacearum* and some other forms; R.A.M., xi, pp. 41, 316] affected the cotyledons, stems, petioles, leaves, and bolls, producing symptoms which are described and are stated to resemble closely those associated with angular leaf spot and black arm of cotton, including a severe boll and lint blight. The epidemic outbreak of the disease in 1931 is chiefly ascribed to the exceptionally wet weather which prevailed from May to September, the total rainfall for that period being 341 mm. as compared with the local normal average of 181.5 mm. From September onwards, as the weather became more settled, the incidence and severity of new infections decreased, with the result that the later pickings of the crop were considerably healthier than the earlier.

**APPROVED FOR RELEASE: 06/19/2000**

CIA-RDP86-00513R000928310012-5"

Field observations in several localities indicated the existence of varietal differences in the relative resistance to the disease of 26 varieties of American Upland cottons [*Gossypium hirsutum*] which were experimentally grown, although none of them was completely immune. In this group the varieties 1306, 2019, and 182 were the least severely attacked by the stem and boll forms of the disease, which are stated to be the most destructive under the local conditions. Varieties of *G. herbaceum*, as a class, showed considerably greater resistance, and some of them gave indications of complete immunity.

There was further evidence that sowing cotton on autumn-fallowed soil tended to reduce the incidence of early infections.

Tests with various manures showed that applications of a fertilizer containing phosphorus and potassium reduced the incidence of the disease from 83.6 per cent. in the control to 31.3 per cent., while applications of a nitrogenous fertilizer reduced the percentage of attack to 25.6. The use of relatively resistant varieties, e.g., Upland 1306, may also tend to minimize the losses.

KVASHNINA, E. S.

KVASHNINA, E. S. "Tobacco Diseases in the Sochi Region of the Black Sea District According to Observations in 1929," Izvestiia Severo-Kavkazskoi Kraevoi Stantsii Zashchity Rastenii, no. 6-7, 1930, pp. 247-260. 423.92 Se8

SO: SIRA SI-90-53, 15 Dec. 1953

KVASHNINA, E. S.

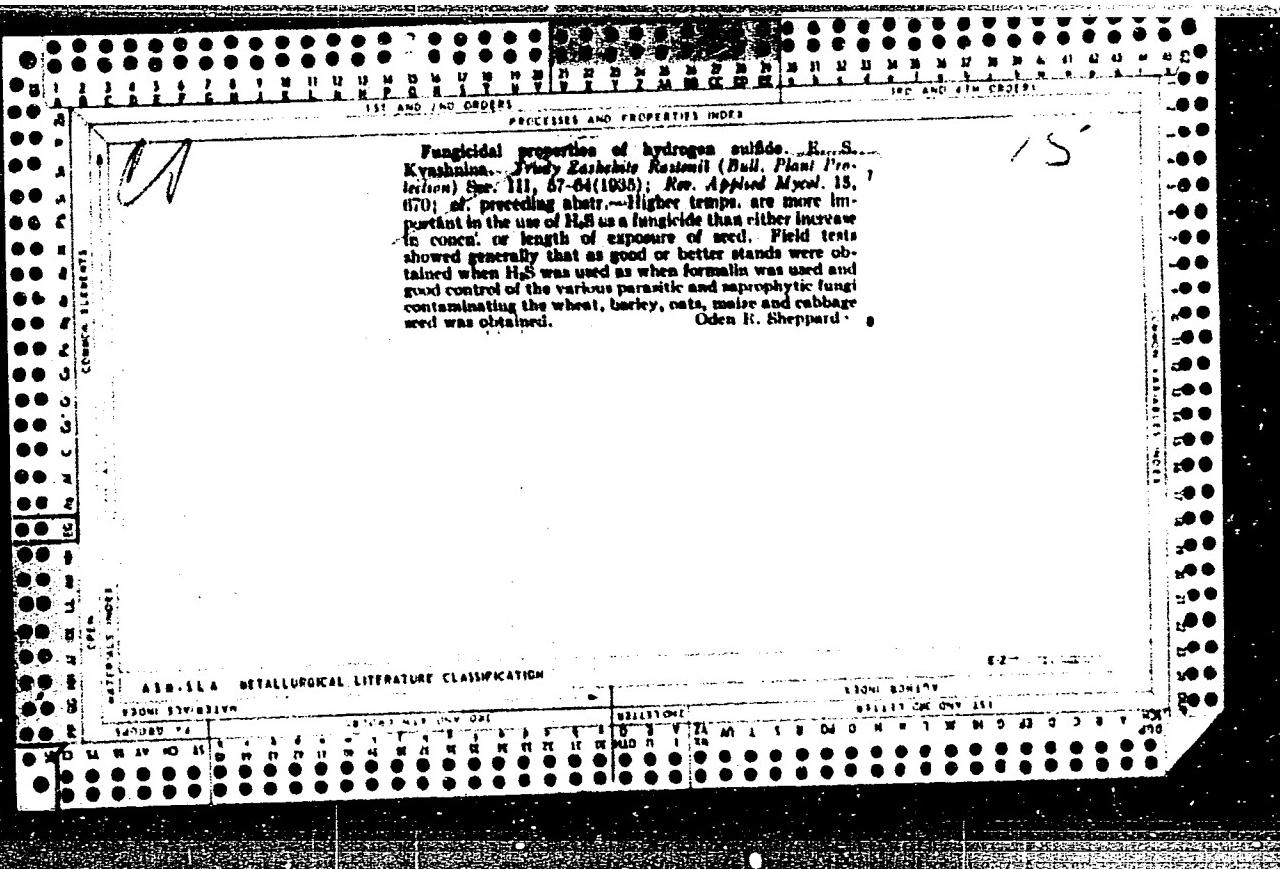
KVASHNINA, E. S. "Gummosis of Cotton on Taman Peninsula, in 1931,"  
Biulleten' VII Vsesoiuznogo S'ezda po Zashchite Rastenij  
v Leningrad 15-23 Noiabria 1932 Goda, no. 8, 1932, pp. 25-26  
423.92 V96

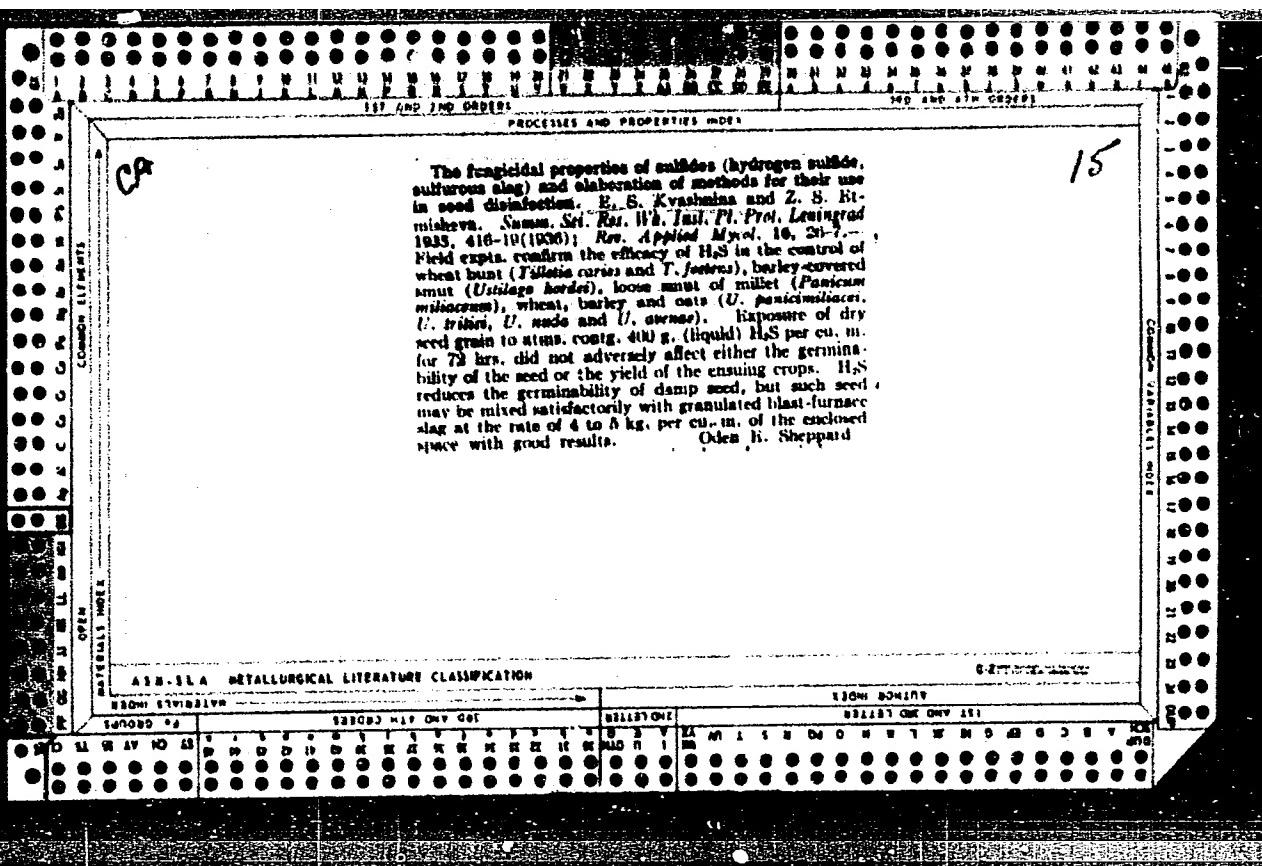
SO: SIRA SI-90-53, 15 Dec. 1953

KVASHNINA, E. S.

KVASHNINA, E. S. "Bacterial Gummosis of Cotton in the Taman Peninsula,  
According to Observations in 1931," Trudy Severo-  
Kavkazakogo Instituta Zashchity Rastenii, vol. 1  
(8), no. 2, 1933, pp. 52-68. 423.92 Se8

SO: SINA SI-90-53, 15 Dec. 1953





KVAS'NINA, E. S.

KVAS'NINA, E. S., and LEMISHEVA, Z. S. "Studies on the Fungicidal Properties of Sulfides and Elaboration of Methods for Their Use in Seed Disinfection," Itogi Nauchno-Issledovatel'skikh Rabot Vsesoiuznogo Instituta Zashchity Rastenii, za 1935 no. 9, 1938, pp. 30-56. 464.9 R73

So: SLRA SI 90-53, 15 December 1953

KVAS.NINA, E. S.

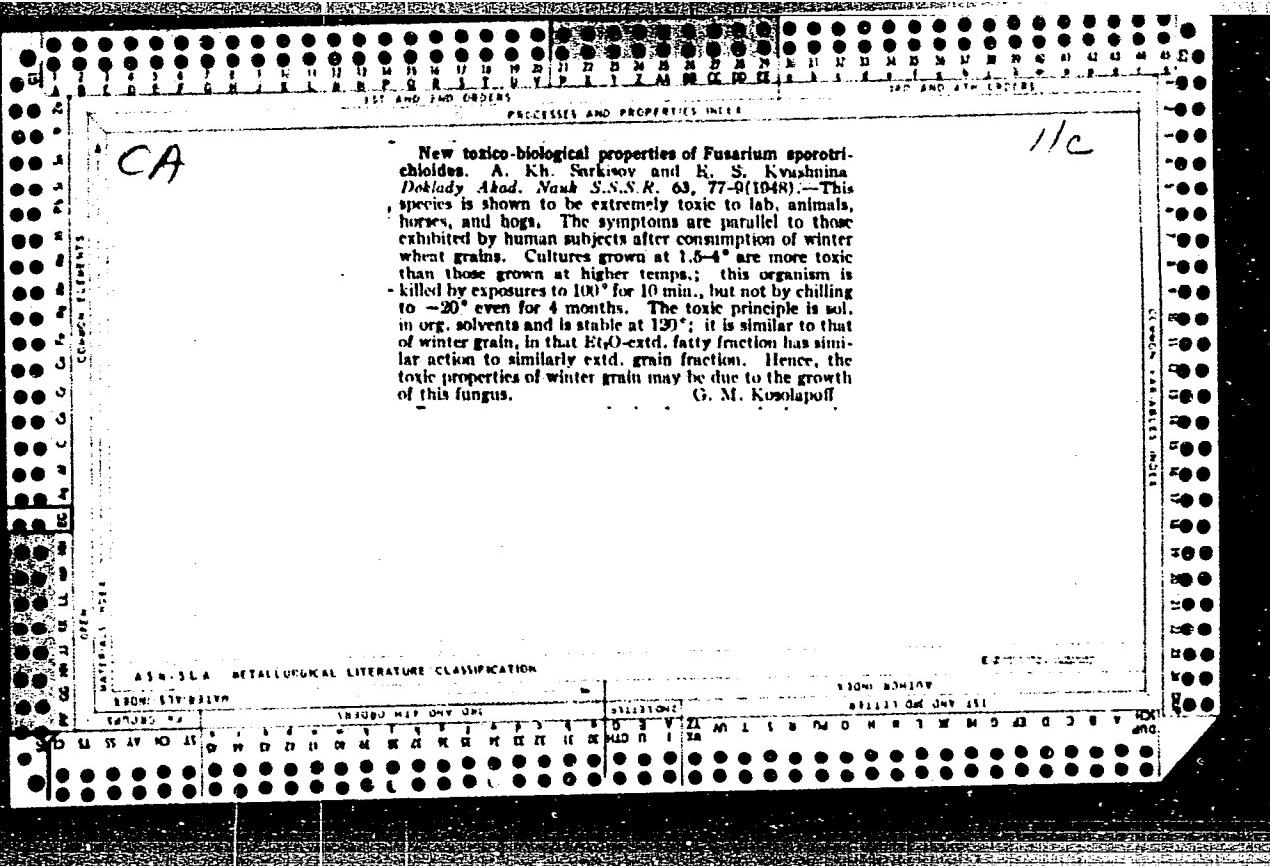
KVAS.NINA, E. S. "Fusariosis of Wheat in the Azov-Black Sea Area," Izvestiia Rostovskoi Stantsii Zashchity Rastenii, no. 9, 1938, pp. 36-86. 464.9 R73

SO: SIRA SI 90-53 15 December 1953

KVASHNINA, E. S.

KVASHNINA, E. S. "Diseases of Seed of Timber Stock and Methods of Disinfection,"  
Sotsialisticheskoe Zernovoe Khoziaistvo, no. 5, 1939, pp. 134-139. 59.6 So72

SO: SIRA SI 90-53 15 December 1953



KVASHNINA, Ye. S.

USSR/Biology  
Fungus  
Toxicology

Nov 48

"New Biologically Toxic Characteristics of the Fungus Fusarium Sporotrichioides Sherb.," A. Kh. Sarkisov, Ye. S. Kvashnina, All-Union Sci Res Lab for Study of Toxic Fungi, Min of Agr USSR, Moscow, 2 $\frac{1}{2}$  pp

"Dok Ak Nauk SSSR" Vol LXIII, No 1

Series of studies show that grain crops remaining under snow through the winter become poisonous due to presence of Fusaria sporotrichioides. Cultural and morphological studies of toxic varieties proved they do not differ from those described in literature, Submitted by Acad B. L. Isachenko 4 Sep 48.

61/49T12

KVASHNINA, E.S.

The Administration of Scientific Research Establishments, Main Administration of Agricultural Propaganda, USSR Ministry of Agriculture, held the first All-Union Scientific Practical Conference, <sup>on chronic bovine hematuria</sup>, at the All-Union Scientific Research Laboratory for the Study of Toxic Fungi. <sup>hematuria</sup>  
The conference date was 26-28 September 1950. A series of reports were heard at the conference on chronic bovine hematuria. Candidate of Agricultural Sciences E. S. Kvashnina (All-Union Scientific Research Laboratory for the Study of Toxic Fungi) reported on "The Problem of the Role of Fungi in the Etiology of bovine hematuria". \* <sup># 5</sup> ~~Age~~  
SO: Veterinariya; Vol. 27; No. 12; 53-55; December 1950. uncl de g.  
Trans. # 242 by L. Lulich

\* Work on chronic bovine hematuria by the All-Union Scientific Research Laboratory for the Study of Toxic Fungi by KVASHNINA in collaboration with O. A/ Gavrilova and P. A. Gerasimova have shown that various toxic fungi do not contribute directly to the etiology of this disease.

Kvashnina, E.S.  
USSR / Microbiology. Antibiosis and Symbiosis. Antibiotics

F-2

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 615

Author : Kvashnina, E.S.

Inst : Not Given

Title : On Interrelationships Among Fusarium Species Infecting Feeds

Orig Pub : Byul. nauchnотekhn. inform. Vses. n.-i. in-t vet. sanitarii  
i ektoparazitol., 1957, No 2, 53-54

Abstract : No abstract

Card : 1/1

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928310012-5"

KVASHNINA, Ye.S.

Determination of the content of antibiotic in fodder oxy-  
tetracycline by the fluorescence method. Antibiotiki 8  
no.1:76-78 Ja'63. (MIRA 16:6)

1. Laboratoriya antibiotikov (zav. - prof. A.Kh.Sarkisov)  
Vsesoyuznogo instituta eksperimental'noy veterinarii.  
(OXYTETRACYCLINE) (FLUORESCENCE)  
(FEEDS—ANALYSIS)

KVASHNINA, Ye. S.

"Method of selection of high-producing variants of act. Rimosus for the surface fermentation of oxytetracycline."

report submitted for Antibiotics Cong, Prague, 15-19 Jun 64.

Antibacterial Lab, All-Soviet Inst of Experimental Veterinary Medicine,  
Moscow.

KURASOVA, V.V.; KVASHNINA, Ye.S.; KADYROV, N.T.; IBRAGIMOV, R.P.;  
MOREV, V.I.; ROGOZHIN, A.I.; SIROTKO, M.

Information. Veterinariia 38 no.11:92-96 N '61 (MIRA 18:1)

AUTHORS: Kvashonkin, I.A., and Lyubimov, K.V. (Leningrad) SOV-47-58-6-23/29

TITLE: Markings in Radio-Engineering Diagrams (Oboznacheniya v radiotekhnicheskikh skhemakh)

PERIODICAL: Fizika v shkole, 1958, Nr 6, pp 77 - 78 (USSR)

ABSTRACT: A table of 54 conventional designations for parts of radio-engineering diagrams which are encountered when in a school course in physics and electro-engineering is given.

1. Physics---Study and teaching

Card 1/1

137-58-4-8332

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 289 (USSR)

AUTHOR: Kvashuk, N. F.

TITLE: The Technical and Economic Results of the Employment of Low-alloy Steel in the Building of Merchant Ships (Tekhnicheskiy i ekonomicheskiy effekt primeneniya nizkolegirovannoy stali dlya postroyki sudov grazhdanskogo flota)

PERIODICAL: Tr. nauchno-tekhn. o-va sudostroit. prom-sti, 1956, Vol 7, Nr 1, pp 51-65

ABSTRACT: The author presents the results of analytical calculations of the technical and economic effect of the use of SKhL1 steel for the hulls of dry-cargo carriers and tankers as compared to hulls of equal strength made of St. 4s steel. The author comes to the conclusion that present low-alloy steels (SKhL1) are not suitable for merchant shipbuilding. The use of SKhL1 steel is unavoidable at present because of the shortage of ordinary carbon steels that are readily weldable in thick plate form. Low alloy steels can give good technical and economic results if their corrosion resistance can be made to be at least 50 to 100% greater than that of St. 4s steel at a  $\sigma_s$  of the same order as SKhL1 steel,

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137-58-4-8332

The Technical and Economic (cont.)

all other mechanical properties being adequate. See RzhMet, 1958, Nr 1,  
abstract 1772.

1. Ship hulls--Materials--Effectiveness    2. Ship hulls--Materials  
--Economic aspects    3. Steel--Applications

A. M.

Card 2/2

SHEVANDIN, Ye.M., kand. tekhn. nauk; KOZLYAKOV, V.V., kand. tekhn. nauk;  
MAKSIMADZHI, A.I., inzh.; BYKOV, V.A., kand. tekhn. nauk;  
YEVSTIFEYEV, V.A., kand. tekhn. nauk; BILKIN, V.P., doktor  
tekhn. nauk; REZNITSKIY, L.Ya., kand. tekhn. nauk; PUTOV, N.Ye.,  
prof.; SHIMANSKIY, Yu.A., akademik; GUREYEV, V.A., inzh.;  
VAKHARLOVSKIY, G.A., inzh.; KERICHEV, V.M.; KVASHUK, N.F.,  
inzh.; NOGID, L.M., prof.; REVZYUK, G.A., inzh.; ARKHANGORODSKIY,  
A.G., kand. tekhn. nauk; YEFREMOV, inzh.; OSMOLOVSKIY, A.K.,  
kand. tekhn. nauk.

General discussion. Trudy NTO sud. prom. 7 no.1:112-152 '56.

(MIRA 10:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut im. A.N. Krylova  
(for Shevandin).
2. Leningradskiy korablenstroitel'nyy institut  
(for Kozlyakov, Bykov, Putov, Nogid).
3. TSNIIISTEP (for Maksimadzhi).
4. TSentral'noye konstruktorskoye byuro Ministerstva sudostroitel'-noy promyshlennosti, g. Gor'kiy (Yevstifeyev, Kvashuk, Revzyuk).
5. TSentral'noye-proyektno-konstruktorskoye byuro Ministerstva morskogo flota (for Reznitskiy).
6. Ministerstvo sudostroitel'noy promyshlennosti (for Gureyev).
7. Gosudarstvennyy soyuznyy proyektnyy institut (for Vakharlovskiy).
8. Zavod "Krasnoye Sormovo" (for Kerichev).
9. NIKI (for Arkhangorodskiy).
10. Ministerstvo rechnogo flota (for Yefremov).
11. TSentral'nyy nauchno-issledovatel'skiy institut morskogo flota (for Osmolovskiy).

(Shipbuilding)

KVASHUK, N.F., inzh.

Assembly joint of transverse bulkheads with bottoms in tank vessels.  
Sudostroenie 25 no.8:7-9 Ag '59. (MIRA 13:2)  
(Tank vessels) (Bulkheads (Naval architecture))

L 45149-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB  
ACC NR: AP6014738 (N) SOURCE CODE: UR/0229/65/000/011/0015/0020

30

B

AUTHOR: Kvashuk, N. F.; Kontorovich, B. M.

ORG: none

TITLE: Designing and building ship hulls for the Soviet maritime fleet

SOURCE: Sudostroyeniye, no. 11, 1965, 15-20

TOPIC TAGS: shipbuilding engineering, cargo ship, electroslag welding, alloy composition, corrosion protection

ABSTRACT: The authors review the problems of design, building, and electric welding of hulls of maritime transport ships and analyze means to deal with the designing of metal hulls of vessels and the use of high-strength steel during the past years. The use of light alloys and basic changes in the design of metal hulls of transport ships are discussed. Some information is given on shipbuilding technology and protection of the body of a vessel against corrosion. Orig. art. has: 4 figures.

[NT]

SUB CODE: 13/ SUBM DATE: none/

Card 1/1 au:m

KVASHUK, N.F.; KONTOROVICH, B.M.

Designing and building the hulls of ships of the Soviet  
transport fleet. Sudostroenie no.11:15-20 N '65  
(MIRA 19:1)

BROKSH, M.M.; GVOZDEV, B.P.; KVASHUK, V.S.; KOSHELEV, V.A.

Using cermet filters to remove solid impurities from natural  
gas. Trudy VNIIGAZ no.21/29:205-217 '64. (MIRA 17:9)

Kvasil, B.

KVASIL, B.

621.372.413 : 621.317.355.3 : 621.317.41  
4541. Measurement of complex permittivity and  
permeability in cavity resonator. B. KVASIL.  
Slobozradý Odzor, 16, No. 5, 227-37 (1955) in  
Czech.

Analysis of a cavity resonator completely filled with a dielectric material (liquid or gas) shows that this method is only suitable for the measurement of low-loss materials with small relative permittivity. In general, a measured sample occupies only a small portion of the total resonator's volume. The case is analysed in detail; general expressions relating the complex permittivity and permeability of the sample to the geometry, volume, resonant frequency and quality factor of the resonant cavity are derived. If the sample is placed in zero magnetic field, the expressions become simplified and the permittivity can easily be evaluated; the measurement of permeability is carried out by placing the sample in zero electric field. Approximate expressions for the parameters of a small sample, placed in a rectangular cavity are evaluated for  $TE_{111}$  and  $TE_{112}$  waves. A more accurate analysis shows that the approximate formulae are valid, provided that the volume of the sample is sufficiently small. The case of a cylindrical cavity resonator with  $TM_{111}$  wave is also considered.

R. S. Smorowicz

KVASIL, B.

Use of millimeter waves in radiolocation and telecommunication. p. 260.

SDELOVACI TECHNIKA. Vol. 4, no. 9, Sept. 1956

Praha, Czechoslovakia

SOURCE: East European List (EEAL) Library of Congress, Vol. 6, No. 1, January 1957

KVASIL, BOHUMIL

Category : CZECHOSLOVAKIA/Radiophysics - Radiation of Radio Waves. Antennas I-5

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4496

Author : Kvasil, Bohumil

Title : Rapid Deflection of an Electromagnetic Beam Radiated by a Metallic Lens

Orig Pub : Slaboproudny obzor, 1956, 17, No 5, 243-247

Abstract : A detailed analysis is given of the distribution of the phase of the electric field intensity on the output surface of a metallic lens in the case of a radiator, shifted in a direction perpendicular to the axis of the lens. Based on the equations derived for the phase of the electric field intensity, such a method is proposed for zoning the input surface as to limit the cubic error and to insure as much as possible the linearity of the phase at the output surface when the primary radiator is shifted. Equations are derived for the input and output surfaces of the lens, taking into account the cubic error. The article is written from the point of view of using metallic lenses for rapid three-dimensional scanning in a vertical direction.

Card : 1/

KVASIL, S.

Rapid deflection of electromagnetic beams radiated by metal lenses.  
(Conclusion) p. 309. (SLABOPROUDY OBZOR, Vol. 17, No. 6, June 1956,  
Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

KVASIL, BOHUMIL

"Theoreticke zaklady techniky centimetrovyx vln; celostatni vysokoskolska ucebnice pro prislusne specialiasace na elektrotechnickych fakultach. (Vyd. 1.) Praha, Statni nakl.technicke literatury, 1957. (Theoretical principles of the technology of centimetric waves; a university textbook for specialized fields in faculties of electrical engineering. 1st ed. bibl., diagrs., graphs)"

303 p. (Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 9  
September 1958

KVASIL, B.

"Training of experts on nuclear physics in Czechoslovakia."

JADERNA ENERGIE. Praha, Czechoslovakia, Vol. 4, October 1958."

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 8, September 1959.  
Unclassified.

KVASIL, B.

464  
464

1988. RADIAL FUNCTIONS. B.Kvasil and V.Tysl.

Slaboproudý Obrázek, Vol. 19, No. 1, PT-P8 (1988). In Czech.

The propagation of electromagnetic waves between two flat parallel conducting rings (annuli) is considered. It is shown that the voltage and current in the system (as a function of radial distance,  $r$ , from the origin) is given in terms of radial sines and cosines which are expressed by means of Bessel and Neumann functions. Expressions for the short- and open-circuit impedances of the system are derived. The propagation between two non-parallel plates is also analysed and it is again shown that the currents, voltages and impedances are given in terms of radial functions. Application of radial functions to the analysis of toroidal (magnetron) resonators, waveguide junctions and multi-cavity magnetrons is discussed and illustrated by 9 numerical examples.

R.B.Sidorowicz

raw / 92

KVASIL, B. ; HUSA, V.

Measurement of the conductivity of semiconductors in the microwave range. p. 667

SLABOPROULY OBZOR. (Ministerstvo presneho strojirenstva, Ministerstvo spoju a Vedecka technicka spolecnost pro elektrotechniku pri CSAV)  
Praha, Czechoslovakia, Vol. 20, no. 11, Nov. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1,  
Jan. 1960

Uncl.

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S/109/60/005/05/009/021  
E140/E435

AUTHORS: Gusa, V. and Kvasil, B.

TITLE: Measurement of the Conductivity of Semiconductors in the Centimeter-waveband

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 5,  
pp 796-805 (USSR)

ABSTRACT: This report was read in October 1957 at a Meeting of the Section on Semiconductors of the First Congress of Czechoslovak Physicists.

A contactless method for measuring electrical conductivity of semiconductors, in particular Ge and Si, is described. The basic material may be of irregular shape and placed in a prismatic container. The measurement is carried out by determining the Q of a cavity resonator without sample and with sample. Because of surface phenomena the material must be granular rather than in powder form. There are 5 figures, 1 table and 4 references, 3 of which are English and 1 Czech.

SUBMITTED: April 13, 1959

Card 1/1

KVASIL, B.

"Radiophysical electronics" by N. A. Kapcov. Reviewed by B. Kvasil.  
Jaderna energie 7 no.12: 410-411 D '61.

21.3/00  
27396  
Z/038/61/000/009/001/003  
D257/D305

21.3/00

AUTHOR: Kvasil, Bohumil

TITLE: A contribution to calculating the geometric parameters of the accelerating tube of a high-frequency linear accelerator

PERIODICAL: Jaderná energie, no. 9, 1961, 289 - 295

TEXT: Calculating the geometric parameters of the accelerating tube of a high-frequency linear accelerator has to be made with extreme accuracy since even minute deviations of the phase velocity of the propagation of the electromagnetic waves from the correct value result in disruption of the synchronization between the particle and the electromagnetic field, and the particle is slowed down instead of being accelerated. The usual approach to solving this problem is to divide the accelerating space into two parts, i.e. the radial part between sectionalizing disks and the cylindrical waveguide part with a circular cross-section, as shown in Fig. 1. In the radial part the electromagnetic field is expressed using radial functions, and in the waveguide part by superposition of characteristic functions of the circular waveguide. On a radius  $r=a$  the continuity of the tan-

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Z/038/61/000/009/001/003  
D257/D305

A contribution to calculating ...

gential components of the electric and magnetic fields intensity must hold true. If the functional series in both spaces can be expressed so that they converge uniformly, it will be possible to fulfill with a sufficient degree of accuracy the boundary condition on a radius  $r=a$  and arrive at a fairly accurate formulation of a dispersion equation expressing the dependences between the tube dimensions, frequency and phase-propagation velocity. A new method of calculating this problem is proposed. It is based on the stationary difference of Poynting flows on the boundary between the radial and the cylindrical part. Its first approximation yields a result similar to that obtained by Chu and Hansen, namely

$$\frac{Z_1(ka, kb)}{Z_0(ka, kb)} = \frac{1}{1 + \frac{d}{D}} \cdot \frac{k}{\chi} \cdot \frac{J_1(\chi_0 a)}{J_0(\chi_0 a)} \quad (23)$$

where  $a$  is the inside diameter of the structure,  $b$  the inside diameter of the radial part,  $d$  the disk thickness,  $D$  the distance between disks,  $k$  the wave number of the free space,  $\chi_0$  the transvers propagation constant of the

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27396  
Z/038/61/000/009/001, 003  
D257/D305

A contribution to calculating ...

mode 0,  $Z_0(ka, kb) = J_0(ka) N_0(kb) - J_0(kb) N_0(ka)$ ,  $Z_1(ka, kb) = J_0(ka) N_1(kb) - J_0(kb) N_1(ka)$ , where  $J_0, J_1$  are Bessel functions of the first order, and  $N_0, N_1$  are Neumann functions. The second approximation is already much more accurate and much less complicated than that according to the Walkinshaw-Brilloin method, since it leads to a dispersion equation in the form of a transcendental equation :

$$\frac{Z_1(ka, kb_s)}{Z_0(ka, kb_s)} = \frac{1}{1 + \frac{d}{D}} \left[ \frac{k}{\chi_0} \frac{J_1(\chi_0 a)}{J_0(\chi_0 a)} \left( \frac{\sin \gamma_0 \frac{D}{2}}{\gamma_0 \frac{D}{2}} \right)^2 + \frac{k}{\chi_1} \frac{J_1(\chi_1 a)}{J_0(\chi_1 a)} \left( \frac{\sin \gamma_1 \frac{D}{2}}{\gamma_1 \frac{D}{2}} \right)^2 \right] - \\ - \frac{2 \left( \frac{D}{D+d} \right)^2 \left[ \frac{k}{\chi_0} \frac{J_1(\chi_0 a)}{J_0(\chi_0 a)} \frac{K_{00}}{D} \frac{K_{10}}{D} + \frac{k}{\chi_1} \frac{J_1(\chi_1 a)}{J_0(\chi_1 a)} \frac{K_{01}}{D} \frac{K_{11}}{D} \right]^2}{\frac{D}{D+d}^2 \left( \frac{k}{\chi_0} \frac{J_1(\chi_0 a)}{J_0(\chi_0 a)} \frac{K_{10}^2}{D} + \frac{k}{\chi_1} \frac{J_1(\chi_1 a)}{J_0(\chi_1 a)} \frac{K_{11}^2}{D} \right) - \frac{k}{\Gamma_1} \frac{Z_1(\Gamma_1 a, \Gamma_1 b_1)}{Z_0(\Gamma_1 a, \Gamma_1 b_1)}} \quad (30)$$

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Z/038/61/000/009/001/005  
D257/D305

A contribution to calculating ...

$$\begin{aligned}
 K_{00} &= \frac{\sin \frac{\pi}{4} \frac{D}{D+d}}{\frac{\pi}{4} \frac{D}{D+d}} D; \\
 K_{01} &= \frac{\sin \frac{3\pi}{4} \frac{D}{D+d}}{\frac{3\pi}{4} \frac{D}{D+d}} D; \\
 K_{10} &= \frac{1}{4} \left[ \frac{\sin \left( 4\pi \frac{D+d}{D} \right)}{\sin \left( \pi \frac{D+d}{D} \right)} \left| \begin{array}{l} \sin \left( \gamma_0 - \frac{2\pi}{D} \right) \frac{D}{2} \\ \gamma_0 = -\frac{2\pi}{D} \end{array} \right. + \right. \\
 &\quad \left. \left. + \frac{\sin \left( \gamma_0 + \frac{2\pi}{D} \right) \frac{D}{2}}{\gamma_0 + \frac{2\pi}{D}} \right] ;
 \end{aligned}$$

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 Z/058/61/000/009/001/003  
 D257/D305

A contribution to calculating

$$K_{11} = \frac{1}{4} \cdot \frac{\sin\left(4\pi \frac{D+d}{D}\right)}{\sin\left(\pi \frac{D+d}{D}\right)} \left[ \frac{\sin\left(\gamma_1 - \frac{2\pi}{D}\right) \frac{D}{2}}{\gamma_1 - \frac{2\pi}{D}} + \right. \\ \left. + \frac{\sin\left(\gamma_1 + \frac{2\pi}{D}\right) \frac{D}{2}}{\gamma_1 + \frac{2\pi}{D}} \right];$$

$$\gamma_0 := \frac{\pi}{2(D+d)}; \quad \gamma_1 := \frac{3\pi}{2(D+d)};$$

$$\chi_0^2 := k^2 - \gamma_0^2; \quad \chi_1 := k^2 - \gamma_1^2;$$

$$I_1^2 = k^2 - \left(\frac{2\pi}{D}\right)^2.$$

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A contribution to calculating ...

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Z/068/51/000/000/001/003  
D257/D305

Where  $b_2$  is the radius value as determined by the second approximation,  $b_1$  is the radius value as determined by the first approximation. Using Eq. (30) calculation of an accelerator disk was made for the case

$\frac{v_f}{c} = 0.7$ ;  $a = 1.424$  cm;  $d = 4$  mm;  $D = 1.432$  cm. The dimension  $b = 4.262$  cm was obtained. It was established that this result, contrary to that obtained by the Hansen method, is in good agreement with the experiment within permissible tolerances. There are 2 figures and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc. The three references to English language publications read as follows: W. Walkinshaw, Proc. Phys. Soc., 61, 1947, 246; F.L. Chu, W.W. Hansen, J. Appl. Phys., 18, 1947, 966; W. Walkinshaw, J. Appl. Phys., 20, 1949, 634.

ASSOCIATION: Fakulta technické a jaderné fyziky ČVUT, Praha (Department of Technical and Nuclear Physics, ČVUT, Prague)

Card 6/7

24.1730

AUTHOR: Kvasil, Bohumil

TITLE: Approximate determination of the influences exerted by characteristic-dimension tolerances in the periodic structure of a linear r-f accelerator and their compensation

PERIODICAL: Jaderná energie, no. 11, 1961, 378-383

TEXT: The article derives the relations for approximate calculation of the influence exerted by radial dimensions of the periodic structure of a linear electron accelerator on the phase velocity of propagation, and discusses possibilities of compensating for radial deviations by insertion of ferritic or metal rods. The influence of geometrical tolerances can be determined on the model of a cavity resonator, formed from a 4-disc section of the accelerator tube, and changes in the characteristic frequency of this resonator can be used to derive

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27872  
Z/038/61/000/011/003/004  
D291/D305

Approximate determination...

changes in the phase-velocity of propagation. Both the phase velocity and the characteristic frequency are calculated with the aid of the approximation given by E. Chu and Hansen (Ref. 1: J.Appl. Phys. 18 (1947), p. 996). The author demonstrates the identity of relations expressing the dependence between the dimensions of a cavity resonator and its characteristic frequency, and the dispersion equation for the periodic structure of an r-f accelerator (derived by Chu-Hansen), and thus proves the possibility of determining the dispersive properties of an accelerator tube by the dependence of the resonator's characteristic frequency on its geometrical dimensions. A change in the characteristic dimensions of a linear accelerator must, therefore, result in a change of characteristic frequency. The author then formulates the relations between the characteristic frequency of a cavity resonator and the phase-velocity of propagation, and formulates the characteristic

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27872

Z/038/61/000/011/003/004

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Approximate determination...

frequency change in cases where the shape of the cavity resonator is disturbed, e.g. by changing one of its characteristic dimensions. He thus obtains a formula expressing the relative change of the characteristic wave number of a cavity resonator when its radius ( $b$ ) is changed by a certain value ( $\Delta b$ ) which, in turn, allows the relative change of the phase velocity to be calculated. Deviations from the correct dimensions of an accelerator tube can be corrected by compensation elements in the form of small dielectric or metal rods, inserted into the respective cavity resonator. The author lists then formulas for calculating compensation-rod volumes, necessary for the desired tuning effect. In cases where the actual radius is too small, the characteristic frequency of the cavity resonator will be higher (positive detuning), and viceversa (negative detuning). Ferritic elements can be used only to compensate for positive detuning, metallic elements are suitable to compensate for both positive and negative detuning, depending on whether they are  $\checkmark$

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D291/D305

Approximate determination...

inserted at the place of prevailing electric or magnetic energy respectively. A metallic compensation element can, therefore, be made in form of a screw and compensates at first for negative detuning (when inserted near the cavity wall where the influence of magnetic energy prevails), and subsequently for positive detuning (when driven towards the center of the cavity where the influence of electric energy prevails). According to the above-mentioned relations, the compensation elements correct detuned frequencies as well as phase velocities. In conclusion the author mentions that some mechanical influences on the phase velocity of electromagnetic-wave propagation in a periodic structure could be verified with the aid of an experimental cavity resonator built by the Electronics Department of the Faculty of Technical and Nuclear Physics. There are 10 figures and 3 references; 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as

VH

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Approximate determination...

27872  
Z/038/61/000/011/003/004  
D291/D305

follows: E.L. Chu - Hansen: J.Appl. Phys. 18 (1947), p 996.

ASSOCIATION: Fakulta technické a jaderné fyziky, ČVUT Praha  
(Faculty of Technical and Nuclear Physics, CVUT-  
Czech Institute of Technology, Prague)

Card 5/5

242300

39302  
Z/026/62/007/003/003/003  
D407/D301

AUTHOR: Kvasil, Bohumil, Professor, Doctor

TITLE: General solution of the electromagnetic field pattern in regions composed of sections with simple geometry

PERIODICAL: Aplikace matematiky, v. 7, no. 3, 1962, 227-235

TEXT: The article lists a method of calculating the distribution of an electromagnetic field in complex systems, based on the stationary state of the functional of the linear surface conduction current. This is an energetic method of electromagnetic-field calculation and a precision criterion is given for comparison with other methods. The calculation uses the model of a space composed of two sectional regions ( $V_1, V_2$ ) surrounded by a metal coat ( $S$ ) and separated by the contact areas ( $S_{12}$  and  $S_{21}$ ). Sections  $V_1$  and  $V_2$  are of simple geometry, i.e. the wave or Helmholtz equation can be solved at the boundary condition that the tangential component of the electric-field intensity on the area  $S$  (including areas  $S_{12}$

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D407/D301

General solution ...

and  $S_{21}$ ) is zero. The electromagnetic field in the region  $V_1$ ,  $V_2$  is generally expressed by superposition of individual vector functions of the electric or magnetic field intensity. The author formulates now the boundary conditions according to the common electromagnetic field theory and derives the linear current density ( $K$ ) which will not be zero on the conducting coat  $S$ , and zero on the area  $S_{12}$  laying inside the no-loss dielectric. By calculating the intensities ( $H_1$ ,  $H_2$  and  $E_\gamma$ ) of the magnetic field in the regions  $V_1$ ,  $V_2$  and the area  $S_{12}$  respectively, with the aid of the Huygens-Kottler formula, and mutual substitution, the author arrives at the expression  $K(E_\gamma)$ , where the contact area  $S_{12} \approx S_{21}$  is the domain of definition of the linear operator  $K(E_\gamma)$ . The author proves then the symmetry of the operator, and determines the properties of the surface conduction-current functional  $\Phi(E_\gamma) = \int_{S_{12}} (E_\gamma K(E_\gamma)) dS$ . The

stationary state of this functional is given when

$$K(E_\gamma) = 0, \quad (9)$$

i.e. when the magnetic-field intensity in the region  $V_1$  is an anal-

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General solution ...

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D407/D301

ytic continuation of the magnetic-field intensity in the region  $V_2$ ,  
whereby

$$\Phi(E_\gamma) = 0. \quad (10)$$

The latter expression and the condition of the stationary state, are prerequisites for calculating the actual value  $E_\gamma$ , and used in this article to describe an electromagnetic field in a complex system. The accuracy of the calculation of the functional  $\Phi$  is determined according to a method called 'approximation degree according to energy' and described in Soviet literature. In this method, the approximation degree of function  $u$  to function  $v$  is generally defined by the expression

$$\int_{\Omega} (\langle u - v \rangle \cdot A(u - v)) d\Omega \quad (12)$$

where  $A$  is a linear operator with the domain of definition  $\Omega$ , and  $u$  and  $v$  are two vectorial functional arguments of the operator  $A$ . However, a precision comparison is possible only between such methods which permit one to determine how the condition of the stationary state is fulfilled. Generally, it can be said, that the mere value of the functional  $\Phi$  is a sufficient accuracy criterion when methods are compared where electric-field intensities on the contact

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General solution ...

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D407/D501

area are expressed by the Fourier series (polynomials) with the same number of variables, but different coefficients. Best results are achieved with a method where the functional  $\phi$  assumes a minimum. The described method can also be expanded to a space composed of more sectional regions. There are 2 figures.

ASSOCIATION: FTJF

SUBMITTED: May 15, 1961

Card 4/4

KVASIL, Bohumil, prof., dr.

A contribution for determining the phase velocity of  
propagation of electromagnetic waves in non-homogenous  
conductors. Aplikace mat 7 no.5:375-386 '62.

1. Fakulta technicke a jaderne fyziky, Praha 1, Brehova 7.

L 23093-65 EWT(1)/EWT(m)/EPF(c)/EEC(f)/EWA(d)/EWP(t)/EEC(b)-2/EWP(b)  
Pr-4 IJP(c) JD/JG/GG

ACCESSION NR: AP4047828

Z/0002/64/000/001/0566/0570

AUTHOR: Kvasil, B. (Corresponding member CSAV)

TITLE: Superconducting materials. The properties of superconductors and their uses

SOURCE: Ceskoslovenska akademie ved. Vestnik, no. 4, 1964, 566-570

TOPIC TAGS: superconductivity, superconductor, liquid helium temperature, cryogenic equipment, helium liquefier, solid superconductor, superconductor magnet

ABSTRACT: This article reviews the properties of superconductors and their uses in industry and technology, the state of basic research in superconductors in the world, the state of worldwide applied superconductor research, and the state of basic and applied superconductor research in the CSR. The author points out that the theory of solid superconductors, the principal properties of which have been discovered in the last three years, has not yet been worked out. He concludes that superconductor research and the use of superconductors has lagged far behind in Czechoslovakia due principally to the fact that it has not been generally pos-

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ACCESSION NR: AP4047828

sible in recent years to carry on experimentation at liquid-helium temperatures. The Kralovopolsky Machine-Building Plants, however, have begun the production of helium liquefiers which should rapidly correct this situation. In view of the great prospects for the utilization of superconductors in technology and research, increased attention will be given to this field in the future in Czechoslovakia. For the present it will be necessary to concentrate on the solution of the problem of "the investigation and development of superconductor magnets," because it is in this domain that the most effective use of superconductors may be expected in the years immediately ahead. Groups of scientific workers are being educated and trained to work on this problem. They will be able to follow world developments in superconductors and in case of need will form the nucleus of larger scientific groups to solve new and current problems. To achieve this goal it will be necessary: 1) to complete the construction of the experimental and scientific staff bases of the laboratories and institutes participating in the solution of the problem mentioned; 2) to send Czech workers for short study periods abroad beginning in 1964; and 3) to guarantee the refining of high-purity rare metals (Nb, Zr, V, Ta, Ti, and others). Until this problem is solved, the materials mentioned will continue to be imported. In view of the importance of the discovery of solid superconductors for magnetohydrodynamic research and for ele-

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ACCESSION NR: AP4047828

2

trical engineering in general, and in the framework of major state problem  
X-II-6.1 (The Investigation of the Magnetohydrodynamic Transformation of Heat in-  
to Electricity), the Elektrotechnicky ustav SAV, Bratislava (The Electrical En-  
gineering Institute of the Slovak AS) in 1963 initiated research on the use of  
superconductors to generate powerful magnetic fields. In collaboration with this  
institute, the Ceskoslovenska komisia pre atomovu energiu (Czechoslovak Commis-  
sion for Atomic Energy), took the first steps to organize research in solid  
superconductors in the CSR and made a number of decisions relating to arrange-  
ments for the production of helium liquefiers in Czechoslovakia, the equipping  
of Czechoslovak laboratories with cryogenic equipment, and cooperation with the  
USSR in the field of superconductor research.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: GP

NO REF Sov: 000

OTHER: 000

Card 3/3

KVASIL, J.

Scientific conference of the Higher School of Transportation  
in Zilina. Slaboproudý obzor 24 no.12:734 D'63.

KVASIL, J.

KVASIL, J. N. D. Bosyl's Electric Filters; a book review. p. 398

Vol. 17, no. 7, July 1956  
SEABOPROUDY OBZOR  
TECHNOLOGY  
Praha, Czechoslovakia

So: East European Accession Vol. 6, no. 2, 1957

KVASIL, J.

Ideal converter as a new instrument of analysis of electric circuits. p. 449.

SIAROPROUDY OBZOR. (Ministerstvo vseobecniho strojirenstvi, Ministerstvo, spoju  
a Ceskoslovenska vedecko-technicka spolecnost, sekce elektrotechnika) Praha,  
Czechoslovakia, Vol. 20, No. 7, July 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 11,  
November 1959.

Uncl.

KVASIL, Josef, inz.

Analysis of cascade-connected active four-terminal networks of  
special kinds. Slaboproudý obzor 22 no.2:70-73 '61. (EEAI 10:5)

1. Vysoká škola dopravní.  
(Electric networks)

KVASIL, J., inz.

"Theory and use of linear network" by G.Wunach. Reviewed by  
J.Kvasil. Slaboproudny obzor 23 no.11:Suppl.:Literatura 23  
no.11:L85 '62.

KVASIL, Josef, inz.

"Circuit theory and design" by Dzs. Stjuart [Stewart, J. L.].  
Reviewed by Josef Kvasil. Slaboproudý obzor: Suppl. I literatura  
24 no. 5: L35 '63.

KVASIL, Josef, inz.

"Principles of wire transmission engineering" by H. Schroder.  
Reviewed by Josef Kvasil. Slaboproudý obzor 24 no.10:Suppl.:  
Literatura 24 no.10:L77 '63.

KVASIL, L., inz.

"Theoretic basis of automation and telemechanics" by V.N. Lupal,  
I.M. Bosin, S.A. Pereborov, V.A. Smirnova and A.A. Eiler. Reviewed  
by J. Kvasil. Slaboproudny obzor 23 no.9: Suppl: Literatura L67, L69  
'62.

KVASINKOV, E.I.; SUMNEVICH, M.G.

[Microbiological principles of the ensilage of fodder in  
Uzbekistan] Mikrobiologicheskie osnovy silosovaniia kormov  
v usloviakh Uzbekistana. Tashkent, Izd-vo Akad. nauk  
UzSSR, 1953. 101 p. (MIRA 16:1)  
(Ensilage)

USSR/Cultivated Plants - Fodders.

M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53674

Author : Kvasinkov, V.V., Mukhortov, Ya.N., Kushilkina, N.V.,  
Turbin, K.G.

Inst : Voronezh Institute of Agriculture

Title : The Effect of Sudan Grass on Soil Structure

Orig Pub : Vestn. s.-kh. nauki, 1957, No 4, 49-54

Abstract : Experiments conducted by the Voronezh Institute of Agriculture on leached out medium clayey chernozem in 1955-1956, showed that toward the end of vegetation Sudan grass had accumulated, in the soil layer of 0-40 cm, 37.9-44.1 centners/ha of air-dry roots, the mixture of Sudan grass with vetch, peas or vetchling accumulated 42.2-53.7 centners/ha, the mixture of alfalfa and couch grass of the first year of use accumulated 35.8-41.5

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USSR/Cultivated Plants - Fodders.

M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53674

centners/ha. Mixtures of Sudan grass with legume cultures produced 30% more of thin roots (diameter < 1 mm) than the pure sowing of Sudan grass or the sowing of perennial grasses. Toward fall, 24% of the thin roots of the accumulated mixture of Sudan grass and vetchling underwent decomposition. With regard to the accumulation of water resistant soil aggregates, the total N content and the content of nitrates- the mixtures of Sudan grass with legume cultures were almost equal to the perennial grasses. The buckwheat yield on the mixture of Sudan grass and vetch comprised 13.6 centners/ha; on the Sudan grass the yield was 12.9 centners/ha; on the vetch-oat mixture 13.5 centners/ha and on the perennial grasses - 13.7 centners/ha. The hay yield of the mixture of Sudan grass with vetch comprised 43.4 centners/ha; the yield of vetch-oat mixture was 28.7 centners/ha and the yield of the

Card 2/3

KVASKHVADZE, K. A.

Def. at  
Tbilisi State U.



Dissertation for degree of  
Graduate Geographical Sciences

**APPROVED FOR RELEASE: 06/19/2000**

CIA-RDP86-00513R000928310012-5"

TAVBERIDZE, I.D.; MIKADZE, I.I.; KVASKHVADZE, K.S.

Effective use of sodium humate in drilling [in Georgian with summary  
in Russian]. Trudy Inst. khim. AN Gruz. SSR 13:137-144 '57.  
(Sodium) (Oil well drilling fluids) (Humates) (MIRA 11:4)

TAVBERIDZE, I.D.; MIKADZE, I.I.; KVASKHVALZE, K.S.

Preparation and use of emulsions of petroleum products from  
self-emulsifying oil. Trudy Inst.khim.AN Gruz.SSR 16:159-166  
'62. (MIRA 16:4)

(Petroleum products) (Emulsions)

UKOLOVA, M.A.; KVASKINA, Ye.B. (Rostov-na-Donu)

Relation to the tumor process to thrombokinase activity in the  
tumor tissue. Arkh.pat. 24 no.5:7-13 '62. (MIRA 15:5)  
(THROMBOPLASTIC SUBSTANCES) (TUMORS)

MALAKHOVA, N.I.; PIZHIDAYEVA, L.F.; GORDIYCHUK, K.S.; KVASKO, N.Z.

Chemical processing of hornbeam wood for cellulose and  
semicellulose. Bum. i der. prom. no.2:16-18 Ap-Je '64.  
(MIRA 17:9)

TOPOL'NIK, N.K.; KVASKO, N.Z.; TSETZERO, S.V.

Modernizing the individual units of the papermaking machine  
No. 1 at the Poninka Woodpulp and Paper Combine. Bum. i der.  
prom. no.4:30-34 O-D '63. (MIRA 17:3)

GRINBERG, M.M.; KVASKO, N.Z.

Manufacture of writing paper using blanched reed cellulose.  
Bum. i der. prom. no. 3:32-34 Jl-S '64.

(MIRA 17:11)

KVASKOV, A.I.

ZONNENBERG, S.M.; KVASKOV, A.I.

Machine tool manufacture and automatization of universal equipment  
at the Kikhachev Automobile Plant. Stan.i instr. 28 no.11:34-35.  
N '57. (MIRA 10:12)

(Machine tools)  
(Automatic control)

L 41095-66 EWT(d)/EWT(1) /EWT(m)/EWP(k)/T/FSS-2/EWP(w)/EWP(f)/EWP(v)/EWP(z)/ETI

ACC NR: AP6027206

SOURCE CODE: UR/0193/66/000/006/0037/0038

IUP(c) TT/EM/VV/JD/JG/DJ/JT AUTHOR: Yalov Vega, N. V.; Kvaskov, A. N.

A/B

ORG: none\*

TITLE: Electromagnetic flow meter for liquid metals<sup>14</sup>

SOURCE: Byulleten' tekhniko-ekonomiceskoy informatsii, no. 6,  
1966, 37-38

TOPIC TAGS: flow meter, electromagnetic flow meter, liquid metal,  
~~liquid metal flow meter, liquid metal flow~~ ELECTROMAGNETISM

ABSTRACT: An electromagnetic flow meter for liquid metals has been developed at the Moscow Aviation Institute. The flow meter is intended for use in the alkali metal industry, metallurgical and power industry, and in various purpose hydraulic systems. The sensing elements of the meter never come into contact with the liquid metal. The meter is of simple design, is highly sensitive, and with some modification can be used in automatic control systems of power plants operating under widely varying thermal conditions. Orig. art. has: 1 figure. [DV]

SUB CODE: 13, 18, 14/ SUBM DATE: none/ ATD PRESS: 5055

Card 1/1 hs

UDC: 681.121.082.7

L-38387-66 EWT(d)/EWT(l)/EWT(m)/EWP(w)/EWP(v)/I-2/EWP(t)/ETI/EP(r) IJP(c) EM/WW/JD/JG  
ACC NR: AP6024257 SOURCE CODE: UR/0193/66/000/005/0041/0042

AUTHOR: Yalovega, N. V.; Kvaskov, A. N.

ORG: none

TITLE: Asynchronous liquid metal pump

SOURCE: Byul tekhn-ekon inform, no. 5, 1966, 41-42

TOPIC TAGS: liquid metal pump, current carrier

ABSTRACT: A linear type of asynchronous liquid metal pump, developed by the Moscow Aviation Institute im. S. Ordzhonikidze, is briefly described. The pump has the main advantage of induction pumps, i.e., their contactless feature. In operation, the asynchronous pump does not differ from the conduction pump. However, the role of current carrying busbars is played here by the liquid metal. The accompanying figure shows a cross section of the pump. Linear channel 1 of the pump has a transverse, hermetic grommet 2 not in galvanic contact with the liquid metal. Its surface is coated with thermally insulating layer 3. Magnetic circuit of power transformer 4 passes through the grommet. The primary winding of transformer 5 is fed a-c voltage. Geometrical dimensions of the channel are chosen taking into account the density of the current flowing through the liquid metal. The

Card 1/2

UDC: 621.65 : 621.746.2

L 38387-66

ACC NR: AP6024257

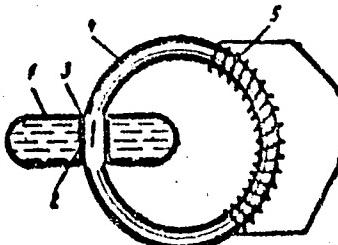
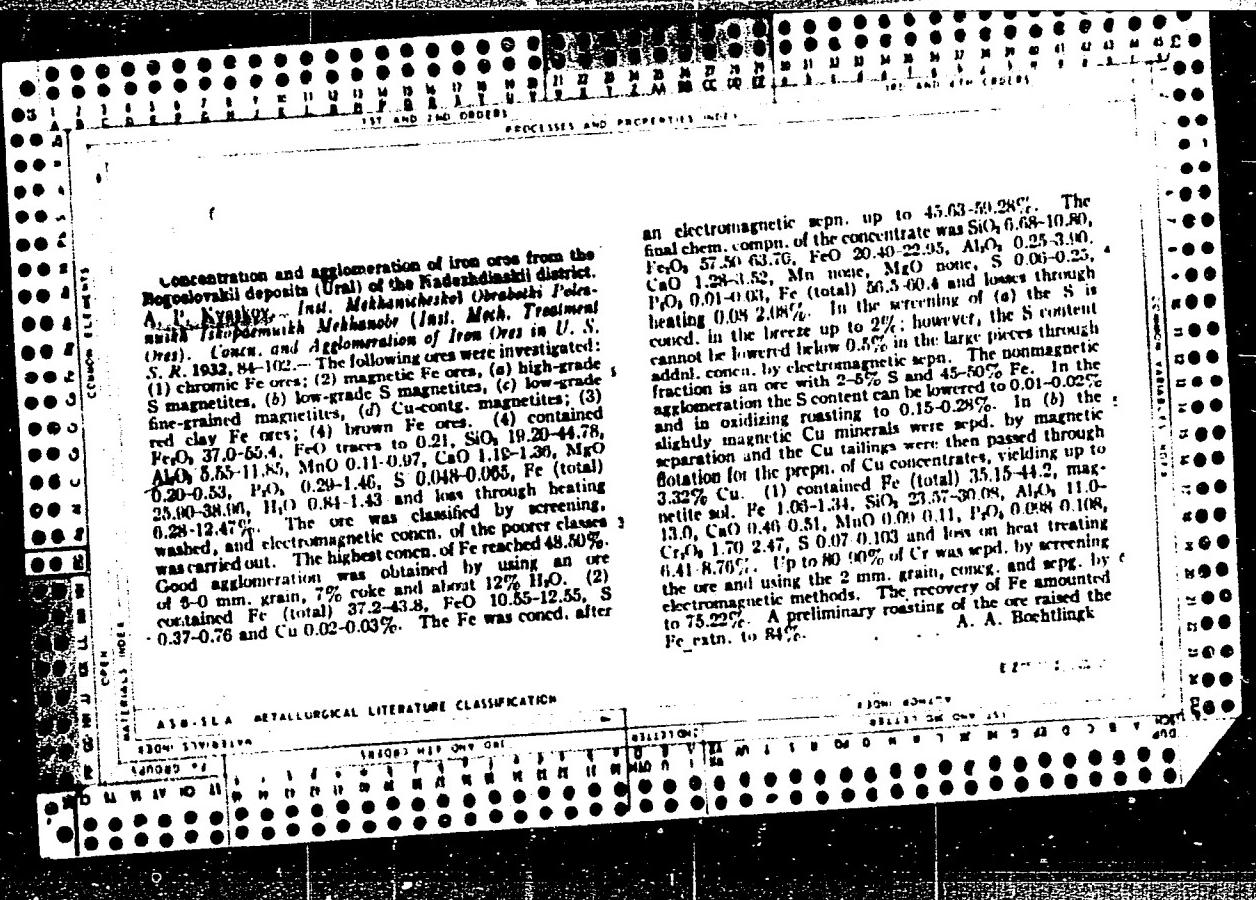


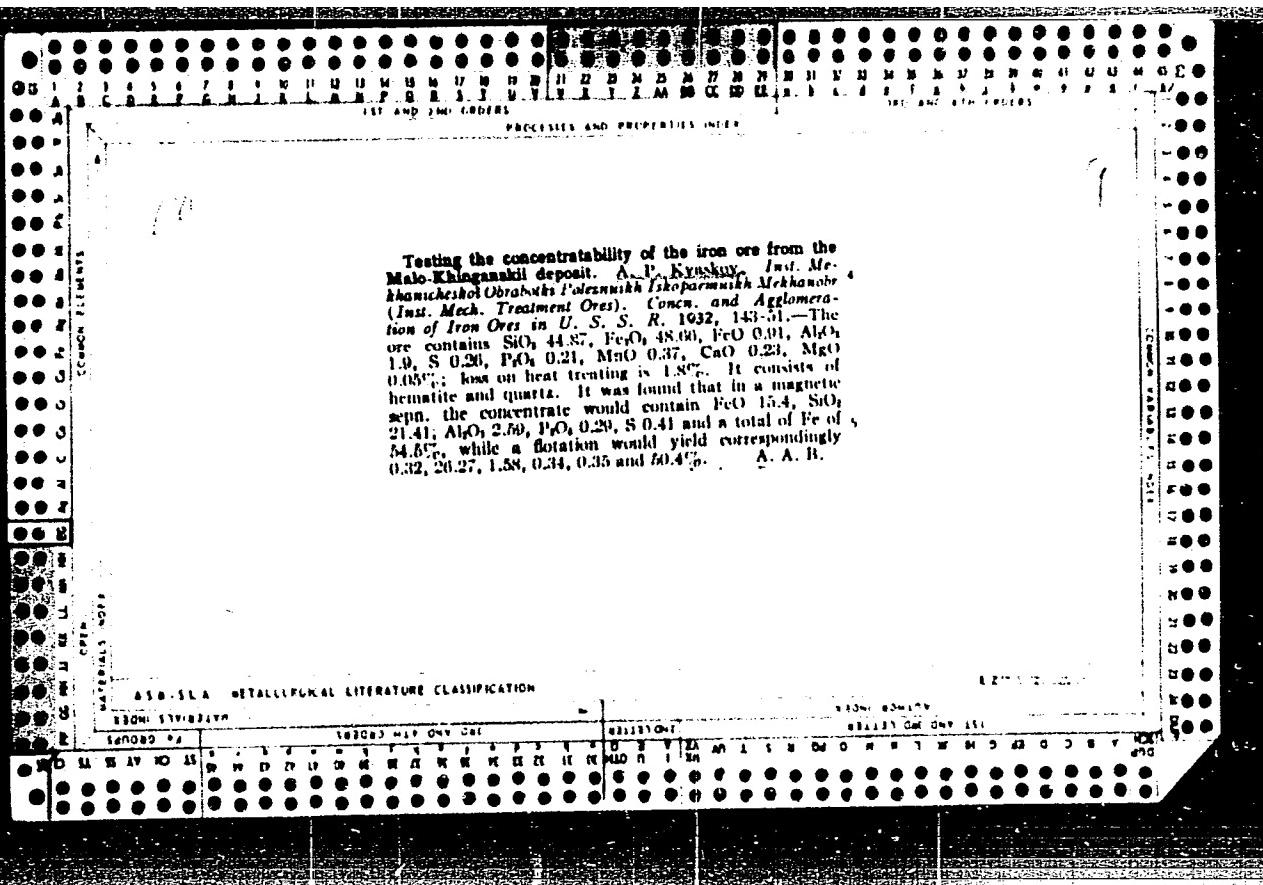
Fig. 1. Cross section of  
the asynchronous pump

optimum coupling of parameters occurs when the transverse excitation current and the secondary current in the liquid metal are in phase. The main technical characteristics of the pump include: capacity, 2.3 l/sec; static pressure, 0.4 kg/cm<sup>2</sup>; hydraulic efficiency, 10.4%; and weight, 10.5 kg. Orig. art. has 1 figure. [JR]

SUB CODE: 13/ SUBM DATE: none/ ATD PRESS: 5042

Card 21211LP



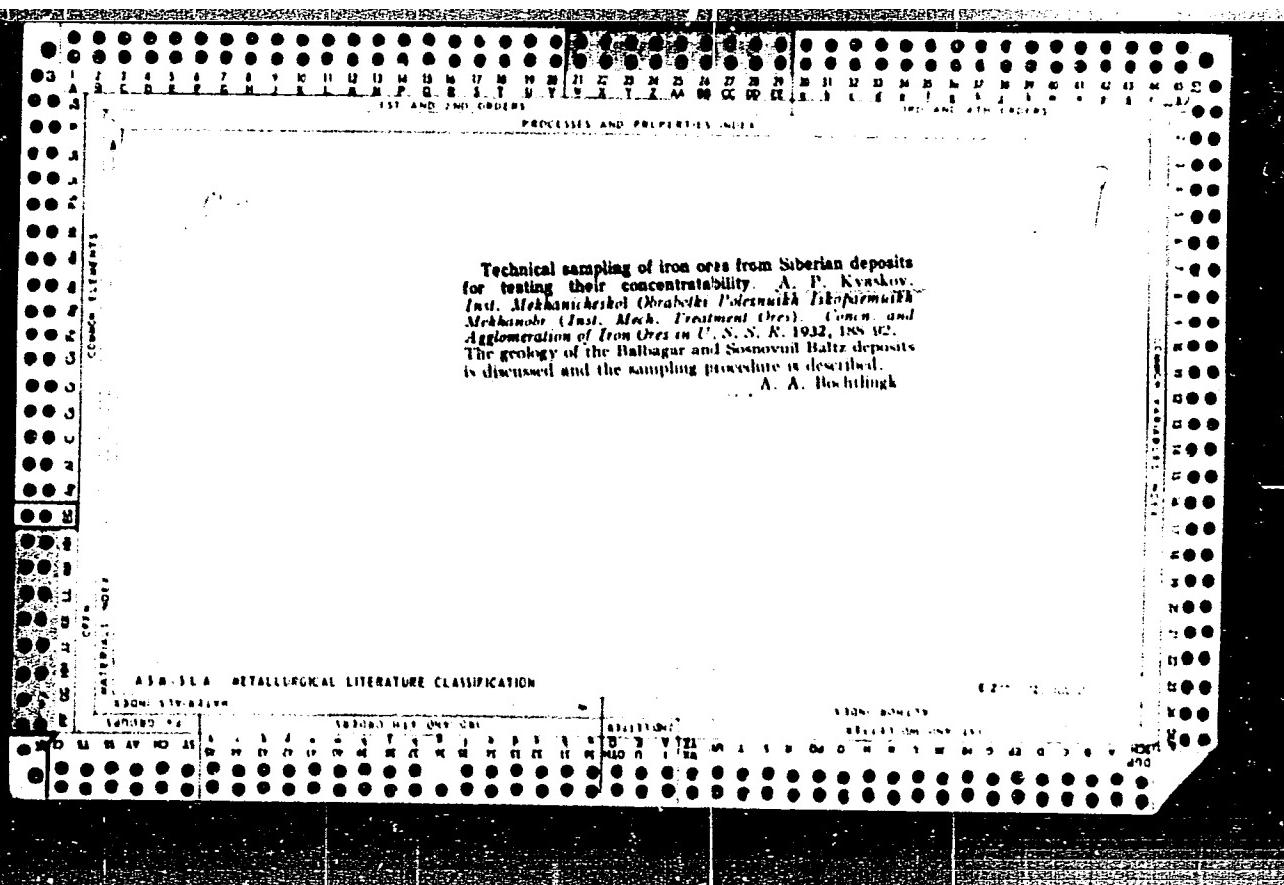


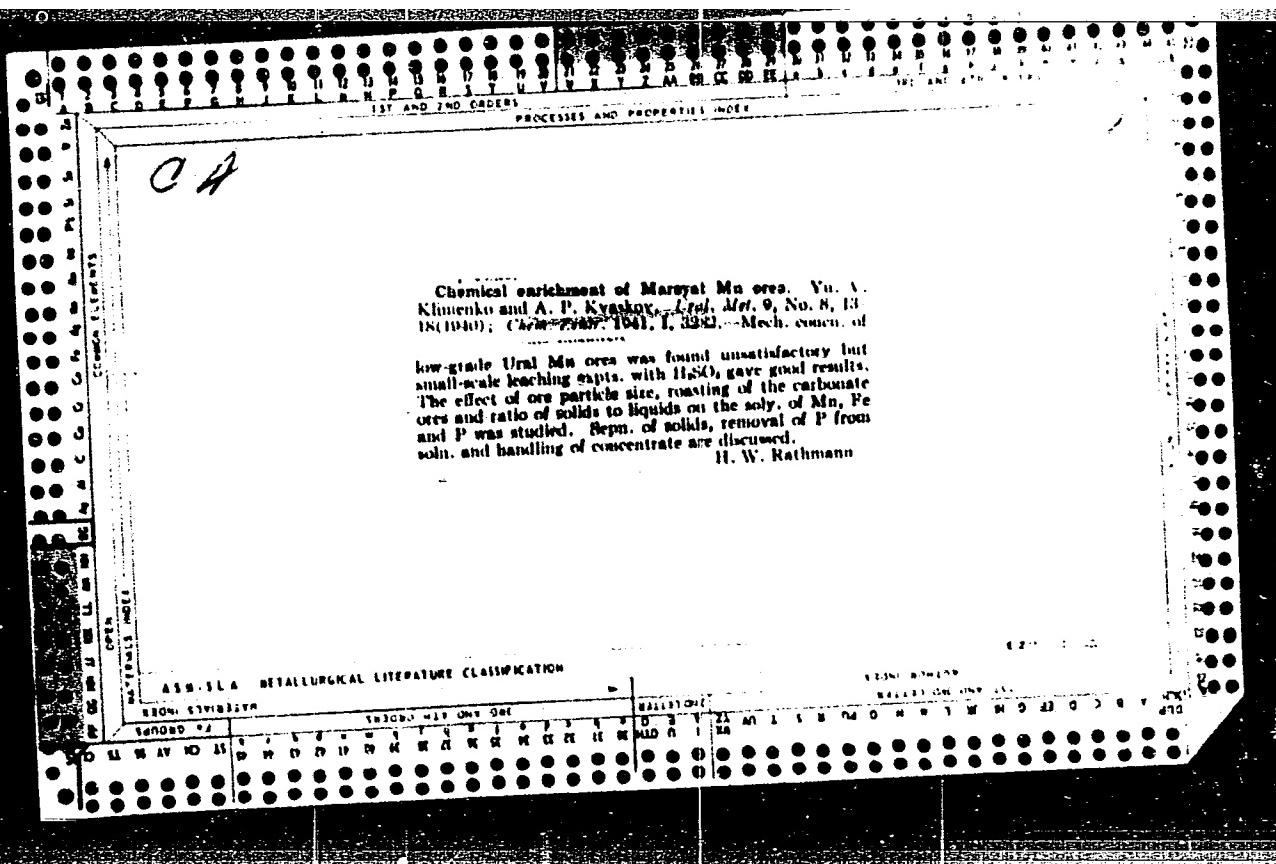
Testing the concentrability of the Dashkesan (Caucasian) iron ore. A. P. Vaskovsky. *Inst. Metallucheskoi Obrabotki Podzemnykh Izkopayemikh Mekhanicheskikh (Inst. Met. Treatment Ores). Concentration and Agglomeration of Iron Ores in U.S. S. R.* 1932, 152-60.—The ore, which is of the magnetite-garnet type, contains Fe 30.5%, SiO<sub>2</sub> 10, SiO<sub>2</sub> 4.40-17.00, Al<sub>2</sub>O<sub>3</sub> 3.12-6.36, CuO 0.10-14.00, MgO 0.00-1.10, MnO 0.18-0.28, S 0.29-0.45, PbS 0.05-0.18, As 0.003-0.004, and the loss on heat treating is 0.44-0.22%. It is concluded that the concn. should be effected with an ore of 25-30 mm. grain size. A 50-59% concn. of Fe is obtained by eliminating the concentrates after the septn. of the fine ore. A content of Fe reaching 61-63% is possible if the ore is ground to 2 mm. and the tailings are sepd. in the first stage of the process.

A. A. Bochtingk

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**CIA-RDP86-00513R000928310012-5"**





KVASKOV, A. P.

PA 43/43T84

USSR/Metals

Mar 1948

Iron

Magnetic Materials

"Preparations for Smelting Magnetic Iron Ore," A. P.  
Kvaskov, Candidate Tech Sci, UralMekhNobr, 4t pp

"Stal'" No 3

Magnetic iron ore after proper dressing and agglomeration becomes high-quality dome-furnace raw material. As result of combined dressing, serve as base for smelting of pig for quality metallurgy. Output necessary for auxiliary dressing processes low and can be recovered to great degree by realization of secondary products (ore of nonferrous and rare metals).

43T84